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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/031,424	03/28/2002	Albert-Patrick Krief	MTR.0032US	6752

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EXAMINER

KIM, KEVIN

ART UNIT PAPER NUMBER

2611

DATE MAILED: 04/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/031,424	<b>Applicant(s)</b> KRIEF ET AL.	
	<b>Examiner</b> Kevin Y. Kim	<b>Art Unit</b> 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 January 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-12 is/are rejected.
- 7) ☒ Claim(s) 8 and 13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to claims 1 have been considered but are moot in view of the new ground(s) of rejection.

Applicant traverses the rejection of the claims by arguing that the Gibbs et al patent, cited against the claims, fails to disclose “calculating a respective error detection code for a subset of bits, placing the subset of bits in a respective transport frame with the error detection code, with the transport frames containing subsets of bits from different frames and accompanied by the respective error detection codes.” Further applicant understands that according to the Gibbs et al patent “although there are more than one class per source such as video or audio channel, only one corresponding CRC for all the classes is used.” By contrast, applicants notes, the claimed invention is said to calculate error correction code “for respective K number of subsets, using K respective error detection codes.” Therefore, applicant concludes, “for example, according to some embodiments, K respective CRC codes are calculated for K respective subsets, as opposed to only one corresponding CRC being calculated for all the classes.” However, the Gibbs et al patent does not describe that “only one corresponding CRC” is calculated for all the classes. Admittedly, it is true that the patent also lacks a teaching that the CRC is computed for only one class. And yet, considering that the purpose of arranging bits in different classes is to give more weight to a more significant portion of the bits by providing stronger error correction coding, it is more reasonable to read the CRC for video channel is computed for its class 3 and the CRC for audio channel is computed for its class 2, respectively.

However, in all fairness to applicants, a new prior art is provided in this Office action, showing CRC is selectively computed for each class when bits are divided into a plurality of classes.

In addition, regardless of the specification disclosing an embodiment that teaches calculating error correction code “for respective K number of subsets, using K respective error detection codes” the scope of the claims is broader than the particular embodiment. Specifically, the claim recites “calculating a respective error detection code for at least one subset of bits included in said at least one set.” (emphasis added). Because of the use of the phrase “at least one subset of bits” the scope of the claims includes a case where an error correction code is computed for just one subset out of a plurality of subsets.

The following is a new ground of rejection in light of the new prior art reference.

***Claim Rejections - 35 USC § 103***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 1-7, 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gibbs et al (US 6,711,182 previously cited) in view of Lagerqvist et al (US 5,502,713).

Claims 1,4,7, 9 and 12.

Gibbs et al discloses a method of forming transport frames, see Fig.1, comprising the steps of

calculating error correction code (CRC) for the bits in a coded-signal frame,  
placing the bits in a respective transport frame with the error detection code,

wherein the transport frames contain a plurality of subsets of bits, emanating from different coded-signal frames (audio channel and video channel) and accompanied by the respective error detection codes. See Fig.3A and 3B.

Gibbs fails to explicitly teach that a respective error detection code is calculated for at least one subset (i.e., class) of bits in the at least one set.

Lagerqvist et al teach selectively providing an error correction code (CRC) for a “class 1a,” which are most sensitive to transmission error instead of computing a CRC for all the subsets (classes) with an unstated benefit of reduced overhead.

Thus, it would have been obvious to one skilled in the art at the time the invention was made to compute the error correction code for the video channel and audio channel for a subset (class) of each channel that is more sensitive to transmission error than others in forming transport frames of the Gibbs, as taught by Lagerqvist et al, for the purpose of reducing overhead associated with the adding of CRC.

Claims 2,5 and 10.

Gibbs et al teaches that the division of data into classes, i.e., “subsets,” are determined according to a design criteria, thus they have a varying number of bits. See 3, lines 11-14. Furthermore, it is well established that the number of error correction code is a matter of design choice depending on how much overhead is accepted for improved error correction performance. Thus, it would have been obvious to one skilled in the art at the time the invention was made to assign a different number of correction code bits “in an increasing function of the number of bits” of the subsets.

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Claim 3.

The total number of bits in the frame and the total number of bits of the error correction codes are constant. See Fig.3A and Fig.3B.

Claims 9.

Gibbs et al teaches a method of extracting coded-signal frames from received transport frames as a reverse process of the encoding process. See col.7, line 49 – col. 8, line 3.

Claim 11.

The total number of bits in the frame and the total number of bits of the error correction codes are constant. See Fig.3A and Fig.3B.

***Allowable Subject Matter***

5. Claims 8 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

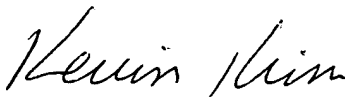
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Y. Kim whose telephone number is 571-272-3039. The examiner can normally be reached on 8AM --5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

March 30, 2006



**KEVIN KIM**  
**PATENT EXAMINER**